Space Weather Forecast

Issued on Saturday 7 December 2024 at 12:17 Local

This forecast provides a four-day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

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Space Weather Forecast Headline: Low to Moderate solar activity.

Analysis of Space Weather Activity over past 24 hours

Solar Activity: Has been Low with a Common-class flare peaking at 07/0859 UTC from a region in the southwest of the disc. There are eight active regions and the majority of these are small and simple, with little significant development. No Earth-directed Coronal Mass Ejections (CMEs) were observed in the last 24 hours.

Solar Wind / Geomagnetic Activity: Solar winds changed little and remained at Low levels at around 370 km/s. Total Interplanetary Magnetic Field (IMF) was mostly weak, while the north-south component varied weakly. Geomagnetic activity remained at Quiet levels.

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) persisted at background levels with no solar radiation storms occurring.

Four-Day Space Weather Forecast Summary

Solar Activity: Low to Moderate solar activity is expected with a chance of isolated Moderate-class flares.

Solar Wind / Geomagnetic Activity: No Earth-directed Coronal Mass Ejections (CMEs) geature in the forecast. Low perhaps slightly elevated solar winds are likely to continue. Connection to a faster solar wind may occur late on Day 3 (09 Dec), or perhaps into Day 4 (10th). Solar winds may reach 450-500 km/s. Quiet geomagnetic conditions at first, may become Unsettled to Active by the end of Day 3 (09 Dec) or early Day 4 (10th).

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) is expected to persist at background levels with only a very slight chance of rising given any notable flare activity.

Issued by Met Office Space Weather Advisor, Tel: +44 (0) 370 900 0100 Email: enquiries@metoffice.gov.uk

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Geomagnetic Storms

Geomagnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	No	1	1	1	1
Strong	G3	No	1	1	1	0
Severe	G4	No	1	1	1	0
Extreme	G5	No	1	1	1	0

Radio Blackouts - X-Ray Flares

X-Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 (M Class)	No	40	30	30	40
Very Active	R3-R5 (X Class)	No	5	5	5	5

Solar Radiation Storms (High Energy Protons)

Radiation Storms Probability (Exceedance)	Level ($cm^{-2}sr^{-1}s^{-1}$)	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	5	5	5	5
Very Active	≥ S3 *	No	1	1	1	1
* S3 ≥ 10 MeV ≥ 1000 pfu and/or 50 MeV ≥ 10pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)						

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